Department of Computer Science and Engineering
National Institute of Technology Calicut

Tentative Course Details : Winter 2011-12

CS6124 Topics in Programming Languages

(The instructor reserves the right to adjust the syllabus when required)

Course:

Code   : CS6124
Title   : Topics in Programming Languages
Lecture Hours : Tue 10.15am - 11.15am, Thu 11.15am - 12.15pm, Fri 8.00am - 9.00am
Room   : CSE 303

Instructors:

Name	: Vineeth Paleri	Saleena N
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Office Hours	: By appointment	

Course Objective:

To introduce the students to advanced topics in programming languages including formal semantics, type systems and type safety.

References:

- Benjamin C Pierce. *Types and Programming Languages.* MIT Press, 2002.

- Luca Cardelli. Type Systems. In Allen B Tucker, Ed. *Handbook of Computer Science and Engineering.* CRC Press, 1996.

- Michael L Scott. *Programming Language Pragmatics.* Elsevier, 2004.

Assignments:

1. Functional Programming

2. Implementation of Untyped Arithmetic Expressions.

3. Implementation of Untyped Lambda Calculus.

4. Implementation of Typed Arithmetic Expressions.

5. Implementation of Typed Lambda Calculus and its extensions.

Grading: Exams and Assignments:

Mid-Term Exam I	:	20%
Mid-Term Exam II	:	20%
Assignments	:	20%
Final Exam	:	40%

Course Schedule:

	Evaluation	Topic
Week 01		Programming Languages: Introduction
Week 02		Untyped Arithmetic Expressions: Introduction
Week 03		Untyped Arithmetic Expressions: Syntax
Week 04		Untyped Arithmetic Expressions: Semantics
Week 05		Untyped Lambda Calculus: Basics
Week 06	Midterm Exam I	
Week 07		Untyped Lambda Calculus: Semantics
Week 08		Untyped Lambda Calculus: Programming
Week 09	Assignment Evaluation I	Typed Arithmetic Expressions
Week 10		Typed Arithmetic Expressions
Week 11		Simply Typed Lambda Calculus
Week 12		Simply Typed Lambda Calculus
Week 13	Midterm Exam II	
Week 14		Extensions: Base Types, Derived Forms, Let Bindings
Week 15		Extensions: Pairs, Tuples, Records
Week 16	Assignment Evaluation II	Extensions: Sums, Variants
Week 17		Extensions: References, Exceptions
Week 18		Extensions: Sub typing, Polymorphism (optional)

Grading: Policies:

- Grading will be relative.

- Even though the grading will be relative here is a tentative grade distribution:
  90-100: S; 80-89: A; 70-79: B; 60-69: C; 50-59: D; 40-49: E; <40: F.

- All issues regarding valuation of exams must be resolved within one week after the marks are announced.

Standard of Conduct:

Each student is expected to adhere to high standards of ethical conduct, especially those related to cheating and plagiarism. Any submitted work MUST BE an individual effort. Any academic dishonesty will result in zero marks in the corresponding exam or evaluation and will be reported to the department council for record keeping and for permission to assign F grade in the course. The department policy on academic integrity can be found at: http://cse.nitc.ac.in/sites/default/files/Academic-Integrity.pdf